

## **BIEB 130: Marine Conservation Biology**

Lecture: Tu/Th 11:00-12:20, Price Center Theater

**Professor:** Dr. Carolyn Kurle, ckurle@ucsd.edu, Muir Biology 4218 (office)

Office Hour: Tuesday, 1:00-2:00 pm

If you can't make my office hour, please attend one of the TAs office hours. You can go to any of the TAs office hours, not just the TA for your section.

**Contact:** The best way to contact me is via email (ckurle@ucsd.edu). On all emails **PLEASE put BIEB 130 in the subject line** to indicate your email is about this course. Due to the number of students, I cannot individually answer questions about course content by email. Ask questions during lectures, discussion sections, and my own and the TA's office hours.

### **Teaching Assistants:**

Elizabeth Hetherington (ehetheri@ucsd.edu)

-Office Hour: Thursdays, 1-2 pm, Muir Biology Room 4268

Tanner Howard (t1howard@ucsd.edu)

-Office Hour: Wednesdays, 12-1 pm, Muir Biology Room 4145

Stephanie Nehasil (snehasil@ucsd.edu)

-Office Hour: Tuesdays, 9:45-10:45 am, Muir Biology Room 4268

### **Course Goals**

- Understand the nature and impact of human activities on marine ecosystems
- Understand the biological principles that explain the mechanisms by which these impacts occur
- Appreciate the diversity of marine ecosystems and how we can use science to: identify impacts, measure them, and suggest novel approaches for protection and restoration
- Develop capabilities for accomplishing measurable conservation actions

**Websites:** Lecture notes: tritoned.ucsd.edu; Video Podcast: podcast.ucsd.edu; Piazza for questions for and interactions with other students and IAs: Use the code bieb130 and sign up for Piazza here: piazza.com/university\_of\_california\_san\_diego/spring2018/bieb130; Link to our Piazza course page: piazza.com/university\_of\_california\_san\_diego/spring2018/bieb130/home

**Grading:** 100 Points: Midterm 1

100 Points: Midterm 2

40 Points: Quizzes (4, 10-point quizzes given in discussion sections)

24 Points: Participation and Attitude (3 points per discussion section)

25 Points: Clicker participation in lecture (see below)

10 Points: Summary statements of two presentations given on the day of our final

299 Total graded points available

10 Points: Extra credit points available (see below)

**TritonEd:** Lecture notes and all reading material will be available on TritonEd (<https://tritoned.ucsd.edu>) by 10:00 am the day of lecture. Extension students can bring proof of enrollment to the ACMS Help Desk (Applied Physics and Math bldg. 1313, M-F, 8:00-4:30) to obtain TritonEd access. More information for extension students can be found here: <http://extension.ucsd.edu/student/index.cfm>. **Contact the help desk at TritonEd if you have problems.**

**iclicker:** **See the last pages of the syllabus for all details on clickers.**

We will be using clickers in class. This is a response system that allows you to answer questions I pose in class. You will be graded on your in-class participation. To receive credit, you need to register your

iclicker remote using the link on our TritonEd course menu. iclickers will be used during every lecture. Older versions of the iclicker can be used as long as the remote ID can be read and the remote can be registered on TritonEd. You cannot share an iclicker remote with another student enrolled in this class (but you can share with someone who is not in our class).

My philosophy on iclickers is that it's a way for us to interact - both with me and with your fellow students - during lecture. It helps me understand if you are understanding, it allows for discussion, connection, and further clarity on topics. Research clearly shows that students do better with some degree of interactive learning, so this is how I try and achieve that when there are hundreds of you.

**Students found to be clicking in for classmates who are not in lecture, or if someone else is clicking for you when you are not in lecture, will get an automatic zero for ALL clicker points.** This is considered cheating and will be reported to the Academic Integrity Office (see below; **cheating sucks**).

**Piazza:** We will be using Piazza for answering questions or discussions of issues related to BIEB 130. The system is catered to getting you help fast and efficiently from classmates, the TAs, and sometimes myself. Rather than emailing questions to the teaching staff, post your questions on Piazza. Please sign up and use this resource.

Our Piazza page is: [piazza.com/university\\_of\\_california\\_san\\_diego/spring2018/bieb130/home](https://piazza.com/university_of_california_san_diego/spring2018/bieb130/home)

Use the code bieb130 and sign up for Piazza here:

[piazza.com/university\\_of\\_california\\_san\\_diego/spring2018/bieb130](https://piazza.com/university_of_california_san_diego/spring2018/bieb130)

**Lectures:** The posted lecture notes are outlines, **and essential material will be presented in class that does not appear on web-posted notes or in the readings.** Lectures will also be posted as a **podcast** within 24 hours after each class time and can be accessed at [Podcast.ucsd.edu](http://Podcast.ucsd.edu).

**Readings:** There is no text book for this course. Instead, we have required readings that are available on TritonEd (under the Files with Class Readings section) that will pertain to lecture material and will be covered most closely in discussion sections. There are a handful of readings labeled OPTIONAL in their file names. These are, as indicated, optional reading, but provided for your additional interest.

**Exams:** The two midterms will be in essay format and each midterm will consist of 2 essays. The ground rules for the essays are: You will receive the questions one week before each exam date via TritonEd. You are free to discuss the questions amongst yourselves and consult relevant literature. You can bring a ½ page, one-sided, type-written, outline in 12 pt. font for each question, which you will hand in with your exam (we will check these; fully written responses are not outlines and will result in a zero grade on your exam). Responses to each question will be limited to 1.5, college-rule, lined, one-sided pages for each question which you will hand write during the midterm exam time in the classroom. That means you have 80 minutes to write two, 1.5-page essays during the midterm time, so come prepared and plan ahead. Anything written over 1.5 pages per question will not be graded, so restrain yourself. Grading of essay questions WILL include grammar, structure, and clarity. We will check photo IDs when you hand in your exam, so please bring a student ID or driver's license. Once exams are returned, questions concerning the essays will be addressed in discussion sections or in TA and/or Professor office hours.

**There are no re-grades or make-up exams.** If you miss an exam, you are required to provide official documentation of an unavoidable emergency (serious illness, etc.). Without such documentation, you will receive no points for that exam. If you miss the first midterm AND have valid documentation, the proportion of your grade that is based on your final midterm will be increased to cover the missed midterm. If you miss the final midterm AND have valid documentation, you will receive an incomplete for the course and be re-tested in the next quarter.

**Quizzes:** There will be a total of four quizzes throughout the quarter. One quiz will be given in discussion section every two weeks. These 15-minute quizzes will cover the previous two weeks of lecture and reading material. The quiz schedule is listed below. Format will be short answers and multiple choice. **All quizzes will be given in the first 15 minutes of class. The quizzes will be collected after 15 minutes and there are no make ups for missed quizzes.** If you come in late, you get less time. If you come in really late, you miss the entire quiz.

**Discussion sections:** Section attendance will be monitored, and active participation will be 8% of your grade. All required readings are open for discussion, but there are selected required readings that will be the focus of the TAs attention and will help drive the discussion in section. These discussion readings are found on TritonEd within the required reading folders and are listed below in the discussion section schedule. **You will NOT earn full participation credit by simply attending section; you MUST actually participate in the discussions in order to get full participation credit.**

**MLK and President's Day Holidays:** The two Monday discussion sections led by Elizabeth Hetherington **will not meet** on the two holidays that occur during this quarter (January 15 and February 19). However, Monday discussion section students can attend any of the other discussion sections that week or they can go to any of the available TA or Professor office hours that week for full participation credit. Elizabeth will also hold two extra office hours during each of those weeks to make up for the lost time. She will let her sections know these additional times. There are no discussion sections in the weeks of Jan 8 and Feb 12.

**Final exam/Summary statements:** There is no final exam in this class. Instead, you will have an opportunity to expand on a marine conservation topic (either alone or in a group) and make a presentation to the class during our final exam time on that topic. It may be something you want to learn more about, it may be a call to action about a problem, it could be an expansion of what you are doing for extra credit. There are many directions you could go with this. Your TAs will provide you with some guidance in their office hours and discussion sections and you will come up with topic ideas that your TAs will post on our TritonEd site by week 4. Students can group together based on mutual interest in topic ideas, and all groups who want to present should be finalized by week 6. You don't get points for presenting, but everyone will be required to attend the presentations that will be given during our final exam time, and everyone will be required to write brief summaries of two of the presentations. Presentations can take the form of PowerPoint slides, plays, puppet shows, musical numbers, etc., but should aim to last 5 to 10 minutes. The exact amount of time will depend on the number of students who participate. This is a perfect opportunity to educate us about a topic that we didn't cover or covered only briefly, or get the class to do something that could be beneficial for a marine conservation problem.

**Extra credit:** You can receive 10 extra credit points for the course if you: 1) identify a real and important marine conservation issue, and 2) present evidence of your effort to understand the issue, and 3) take a direct action to improve that issue (e.g. volunteer work, letter writing, etc.). **This is due to your TA by March 15.**

**Grading:** Your final letter grade will be based on your TOTAL number of points. **If everyone earns enough points that they fall at or above 90%, I have no problem giving everyone an A- or better.** However, that is unlikely (but I'd love to have you prove me wrong!). Therefore, if warranted, letter grades will be based on a curve. This means I will make sure that approximately the top 20% of students will receive A- or above grades (even if that means going below 90%); the next 30% of students will receive B- and above grades; the next 40% of students will receive C or D grades, and the final 10% will receive F grades. **And let me reiterate**, ALL students getting a 90% or higher will get at A- or better, regardless of whether it's 20% or 100% of you. In addition, if you receive an 80% to 89%, you will get a B- to B+. Finally, if you get 70% to 79%, you will get a C- to C+.

I do give plus and minus grades but only on the final course grades. The pluses and minuses do not make the curve easier, they only help to differentiate the scores within the ranges above. Please note that

the university will not allow me to change a letter grade after they are turned in except in cases of demonstrable clerical error.

**Cheating:** In the unlikely event that you succumb to temptation and decide to cheat, you will be caught and handed over to the Academic Integrity Coordinator. This will be painful and horrible for all involved, so please don't do it. For information: <http://students.ucsd.edu/academics/academic-integrity/index.html>.

**OSD students:** Contact the Office of Students with Disabilities (OSD) at 858.534.4382, 858.534.9709 (TTY) or through their website (<http://disabilities.ucsd.edu/index.html>). Coordinate scheduling of exams with me within the first two weeks of the quarter.

**Enrollment questions:** Visit academic advising (<https://students.ucsd.edu/academics/advising/>).

### Discussion Sections

Time	Place	TA
M, 8-8:50	APM 2301	Elizabeth Hetherington
M, 9-9:50	APM 2301	Elizabeth Hetherington
Tu, 8-8:50	Center 218	Tanner Howard
W, 6-6:50	York 3000A	Stephanie Nehasil
W, 7-7:50	York 3000A	Stephanie Nehasil
Th, 1-1:50	Center 217B	Tanner Howard

### Lecture Schedule (subject to change)

Date	Subject	Required Reading Folder (on Triton Ed)
January		
9	1. Overview of Marine Conservation, Human Impacts	1. Overview
11	2. Marine vs. Terrestrial Ecosystems	2. Marine vs Terrestrial
16	3. Marine Habitats	3. Marine Habitats
18	4. Marine Biodiversity and Ecosystem Services	4. Marine Biodiversity
23*	5. Marine Ecosystems: Stability, Food Webs, Trophic Cascades, Subsidies	5. Marine Ecosystems
25	6. Population Biology and Extinction	6. Population Biology
30	7. Fisheries Management I: Fishing Down Food Chains, Shifting Baselines	7. Fisheries Management 1
February		
1	8. Fisheries Management II: Traditional Management Models	8. Fisheries Management 2
6*	9. Fisheries Management III: Habitat Destruction, Bycatch	9. Fisheries Management 3
8	Midterm 1	
13	10. Marine Protected Areas, Marine Spatial Planning	10. Marine Protected Areas
15	11. Ecosystem Based Fishery Management	11. Ecosystem Based management
20*	12. Coastal Development	12. Coastal Development
22	13. Aquaculture	13. Aquaculture
27	14. Introduced Species	14. Introduced Species
March		
1	15. Pollution, Harmful Algal Blooms, Eutrophication	15. Pollution
6*	16. Ocean Climate, El Niño, Pacific Decadal Oscillation	16. Climate Change
8	17. Climate Change	16. Climate Change
13	18. Ocean Acidification	17. Ocean Acidification
15	Midterm 2	
22	Final (presentations and summary statements)	1130-2:20

**Discussion Section Schedule**

Week	Subjects	Papers targeted for discussion
January		
8	No Sections	
15	Overview	Halpern et al. 2015, Parsons 2016
22*	Biodiversity and Ecosystem Services	Gamfeldt et al. 2015
29	Population Biology	Kindsvater et al. 2016
February		
5*	Fisheries management	Heithaus et al. 2008, Pauly & Zeller 2016
12	No Sections	
19*	MPAs	Gill et al. 2017, Lubchenco et al. 2015
26	Aquaculture	Granada et al. 2015
March		
5*	Pollution	Rochman et al. 2016
12	Climate and climate change	Welch 2016, Hoegh-Guldberg 2017

\*Denotes a quiz week in Discussion Section.

**CLICKER INSTRUCTIONS**

It is your responsibility to have your clicker with you at lecture and to make sure it is working properly. **There will be no make-up opportunities for clicker questions, for any reason, nor can you get clicker credit for handing in questions on paper, etc.**

**Clicker Grading**

You will be graded on your in-class participation using iclickers, NOT on having the correct response, as often I will use these questions to identify confusing topics or create discussion opportunities. **If you come to 70% or more of the lectures (13 out of 18 lectures) and click in, you will receive full credit. To reiterate, you can miss 5 lectures and still get full credit.**

If you answer

> 70% of lecture days	you will receive	25 points
> 60% of lecture days		20 points
> 40% of lecture days		15 points
> 20% of lecture days		10 points

**Recommendations**

- Bring extra batteries (clickers require 2 AAA batteries)
- Put your name on your clicker
- Cover the ID number on the back with a piece of clear tape to prevent it from rubbing off

**Register your clicker**

**You must register your iclicker through TritonEd to receive credit for responses during class.**

**If you have not registered your clicker by January 29 (3 weeks from the start of class), then it will be too late and you will receive zero clicker points.**

**Register your clicker using the link on our TritonEd page.** On the left side of the screen, there is a list with Syllabus, Required Readings, etc. At the bottom of that list is iClicker Registration. Click on that and follow the instructions. If you have used an iclicker for a previous class, and registered it through TritonEd, you do not need to register it again.

**NOTE:** The instructions that come with your remote ask you to register your iclicker at [www.iclicker.com](http://www.iclicker.com). While you are welcome to do this, it is not necessary.

You will not see your clicker points on TritonEd until you have registered your clicker. To ensure your clicker is working properly, please register **RIGHT AWAY**. Every student in this course must have their own iclicker to receive clicker points.

### Using your clicker

Turn your clicker on with the bottom button. **Set it to the frequency in our room (CA)** I will ask questions, and you will respond by pushing buttons A – E. Please wait until I start the voting before you respond. When your answer has been received, you will see a checkmark at the top of your screen. While the timer is going, you can change your answer as many times as you want. Just press a different button. You get credit for answering the question, regardless if your answer is correct or incorrect. Like all technologies, clickers sometimes malfunction. This is why I give full clicker credit if you come to 70% or more of the lectures. **I do not adjust scores in other ways, so please don't ask.**

### Lost clickers

If you lose your clicker mid-quarter and use a different clicker, you need to change your registration online AND you need to email your TA the following (before the next lecture): a) your PID b) your clicker ID.

### Clicker Troubleshooting

Some clickers are not functional or some days you may not want to come to lecture, **that is why you receive full credit for only clicking in for 70% of the lectures.** It is your responsibility to use this grace period to learn how to use your clicker and make sure that your clicker is working as I do not adjust scores for malfunctioning clickers.

**To be clear, if your clicker is not working, I will NOT award points retroactively, so you MUST figure out why it's not working immediately. No exceptions.**

If you have problems, go through the troubleshooting guide below.

If you are not getting the points you deserve:

- Be sure you have registered. This means through TritonEd (NOT at [www.iclicker.com](http://www.iclicker.com))
- Make sure your remote is on the correct frequency (**CA, for this class**)
- Make sure you wait until I start the question before you answer - you should see the timer going.
- Make sure you answer before time has run out. No answer is accepted after the time has ended
- Every student in this class needs their own clicker – if you are sharing with another student in the class, one of you will not get any points.
- Are your batteries still good?

If you have done everything correctly, but your clicker is still not working, please see one of the IAs for assistance. They will help you troubleshoot your clicker and check it. If your clicker is malfunctioning, the bookstore will exchange it. We cannot do anything to check your clicker over email. **It is your responsibility to make sure you are getting the points you deserve.** If there is a problem, you need to solve it or see one of the IAs right away so we can resolve the problem for future lectures.

## ACTIVE SHOOTER GUIDELINES

Unfortunately, in the world we live in, the potential for an active shooter incident on campus, while still miniscule, does exist. To that end, I went to a campus training on the subject and am sharing with you what I learned so, if we are ever faced with a crazy person shooting on campus, we may increase our chances of remaining safe. Campus police recommend adhering to the ALICE guidelines (see below) when faced with an active shooter.

### ALICE stands for:

**A: Alert** – if you see something weird ahead of time, alert the non-emergency campus police hotline (858.246.1111) immediately. Don't worry about looking alarmist. Just do it.

**L: Lockdown** – if you can't escape a shooter, then lockdown the area you are in to discourage and prevent the shooter from coming inside. Lock the door, turn off the lights, wrap a cord or belt around the door closer (the mechanism that is bent at an angle at the top of a door that allows it to close automatically) to keep the door from opening, and/or barricade the door with chairs or other furniture. Then, line up a group of volunteers at each door (out of sight of the window in the door) armed with anything that could be used as a weapon – fire extinguishers, chairs, books, heavy backpacks. If the shooter enters, IMMEDIATELY swarm the shooter and subdue them. Shoot them in the face with the fire extinguisher foam, throw the chairs/backpacks/books at their face, then tackle the shooter. Studies show that people will automatically reach up to protect their faces creating a valuable moment to tackle the shooter. If a group works together, the chances of getting hurt are smaller. Assign people to hold each leg, arm, head, and the torso. Do NOT let go. Take the weapon and secure it under a garbage can, chair, or otherwise out of site. DO NOT point the shooter's gun at the shooter as the police may mistake you for the suspect and shoot you. When the police arrive, calmly explain that you have subdued the shooter, tell where the weapon is, and await further instruction. It will be chaotic when the cops arrive, so stay calm.

**I: Inform** – while the event is happening, if you are able, inform others and/or the police what is going on. This can provide real-time important information to law enforcement.

**C: Counter** – Fight back or counter the attacker if you can't escape. See the guidelines in the Lockdown section above. Shooters do not expect to encounter resistance and frequently give up immediately when they do. Do not just stand or sit or cower in place. **Resist.** Even if you are shot rushing at a shooter to tackle them, the chances of that shot being fatal are small. However, holding still and allowing yourself to be a better target for a shooter increases your chances of being shot somewhere more damaging.

**E: Evacuate/Escape** – This is the first thing you should do if you find out that someone is on campus shooting. If it's happening somewhere away from where you are, then just get out of your building and walk off campus and go as far as you can. Don't try and get to your car, just walk off campus. Only if you can't escape should you do the Lockdown procedures described above.

**The bottom line is to be prepared and don't be in denial.** In classes, be thinking, what would I do if this terrible event happened? What's the best escape route? How do the doors work? Could I use my belt to tie the door closer shut? Are there cords anywhere that would work to hold the door shut? What can be used as obstacles to counter the shooter? Can I throw the chairs or are they attached to the floor? Do I have a book or computer that would work as a weapon? What about my backpack? Where's the fire extinguisher?

Finally, if you notice someone around you in distress or depressed or expressing malcontent, be kind, reach out, get help, and tell the people who can help (Counseling and Psychological Services (CAPS) at <http://caps.ucsd.edu> or (858) 534.3755 or the non-emergency police line at 858.246.1111).

We are all in need of love and care and I think remembering to **cultivate warm-heartedness** toward our fellow humans could go a long way in preventing some of this tragedy. Please keep that in mind as you move through your day on campus, interacting with others. Thank you.

**For more information on active shooters on campus, please go here:**

<http://police.ucsd.edu/services/alice.html>